

Bone case study

[Business](#)



Debbie Morgan is a 45-year-old female who works as a secretary for a big corporation. While going to the stock room to pick up some supplies for a meeting, a large box falls on her and brings her to the ground.

The ambulance personnel reported that she had lost quite a bit of blood at the accident scene and was “knocked out” when they arrived. You meet the paramedics as they bring Mrs. Morgan into the emergency room and begin to assess her for injuries. She could not remember what had happened, but complaining of severe left arm pain.

Ms.

Morgan had inflammation and redness at the site you notice a large open wound on her arm with what appears to be bone tissue sticking out of the skin. As you are asking her questions, she seems confused and unaware of about. Ms. Morgan complains of a tingling pain that she is having in her fingers and lips. You decided to take her vitals and realize that her heart is beating irregularly.

After you check her out, Ms. Morgan undergoes several x-rays, which reveal the following: 1) fracture of the left humerus at the proximal diaphysis

Short Answer Questions 1.

Define the following terms, used in the case and also in associated

questions: a. Inflammation : Part of the body become reddened swollen and painful b. Fracture : Break in the body c. Proximal: Point of attachment d.

diaphysis: Is the long cylindrical off long bone. 2. What is wrong with Ms.

Morgan besides the fracture? Inflammation 3. What symptoms lead you to

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your conclusion? The complaining of severe left arm pain that is redness and the open wound. 4.

The diaphyses of Mrs. Mooring's humerus is fractured. What type of bone makes up the majority of the diaphyses of long bones like the humerus?

Describe the layers of bone tissue found here. Compact bone layers are : Lacunae, Canaliculi, central canal, Lamellar bone. Most connective tissue, including bone, is highly vascular.

Which anatomical structures in Mrs. Mooring's compact bone house blood vessels? What sign or symptom in Mrs. Mooring's case is directly related to disruption of these structures by her bone fractures? How is the sign or symptom related to these anatomical structures? Haversian System or Foramina. The sign or symptom can be swelling or pain 6.

Within days after a fracture, a " soft callus" of fibrocartilage forms.

What does that mean and why is it happening? The soft callus is the healing of the fracture. The fibrocartilage convert granulation to a soft callus to form a hard callus. Ossification occur and cause the bone remodeling. 7.

As a fracture is repaired, new bone is added to the injury site. What term is used to describe the addition of new bone tissue? Identify which bone cell is responsible for this process and explain how it occurs. Ossification and it carried out by osteoblasts. 8. In the final stage of bone repair, some of the osseous tissue must be broken down and removed.

What term is used to define the breaking down of osseous tissue? Which bone cell would be best suited for this task? Seacoasts .

The bone marrow -derived stromal cell would be best suited for the task 9.

What are the bone cells that were involved in this process as Ms. Mooring's left arm heals? What are each bone cell doing in this process? Osteoblasts : the tissue that covers the outside of the bone Osteoclasts: cells that are responsible for the formation of new bone Osteocytes : Mature bone cell Seacoasts : cells that are responsible for the breakdown of bones